

Hartzell HC-C2YK-1BF/F7666A-2 Propeller on 180 Hp Lycoming engines equipped with Electronic Ignition or FADEC

The Hartzell Propeller Model HC-C2YK-1BF/F7666A-2 has been vibrationally approved per FAR23.907 on the standard production Lycoming Engine Model O-360-A1A, and similar models, rated at 180 HP at 2700 RPM with a restriction to avoid continuous operation between 2000 and 2250 RPM. The propeller vibration characteristics and stress amplitudes on a reciprocating engine installation are primarily mechanically generated by the engine. Any modification to the standard engine configuration to include high compression pistons, electronic ignition, FADEC, tuned induction and exhaust, and turbocharging or turbonormalizing have the potential to adversely effect the propeller vibration characteristics and stress amplitudes. Hartzell Propeller, therefore, does not endorse any such engine modification unless the specific engine and propeller configurations have been tested and found to be acceptable vibrationwise.

The Lightspeed electronic ignition is not certified for use on any aircraft engines so its use is limited to the experimental/amateur built market. Hartzell recently conducted a test with the propeller model HC-C2YK-1BF/F7666A-2 installed on a standard Lycoming O-360-A1A engine, except for a modification to equip it with the Lightspeed ignition in place of one magneto. The results of this test show an increase in the propeller vibratory stress amplitudes within the 2000-2250 RPM range currently covered by the operating restriction noted in the first paragraph, and additionally above 2600 RPM with high power settings. Based on this data, continued safe use of this propeller on O-360-A1A and similar engines equipped with Lightspeed electronic ignition would require the following:

The Hartzell Propeller Model HC-C2YR-1BF/F7666A-2 is satisfactory vibrationwise mounted on Lycoming model O-360-A1A and similar engines rated at 180 HP at 2700 RPM and equipped with Lightspeed Plasma II electronic ignition installed in Van's Aircraft Model RV-8 and similar single engine tractor aircraft with the following operating restrictions.

1. Avoid continuous operation between 2000 and 2250 RPM.
2. Operation above 2600 RPM is limited to takeoff. As soon as practical after takeoff the RPM should be reduced to 2600 RPM or less.
3. The propeller blades are life limited and must be retired upon reaching 8700 hours.

The propeller diameter limits are 74 to 72 inches.